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Amendment and/or Response
Reply to Office action of 2 June 2005

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REMARKS / DISCUSSION OF ISSUES

Claims 1-5 and 8-22 are pending in the application. Claims 11-22 are newly added.

The applicants respectfully request the Examiner to acknowledge the claim for priority and receipt of certified copies of all the priority document(s).

The Examiner is respectfully requested to state whether the drawings are acceptable.

The Office action rejects:

claims 1, 3, and 8-9 under 35 U.S.C. 103(a) over Stern (USP 5,771,321) and Shigeta et al. (USP 6,266,121);

claim 5 under 35 U.S.C. 103(a) over Stern and Fidalgo et al. (USP 5,690,773, hereinafter Fidalgo);

claims 2, 4, and 10 under 35 U.S.C. 103(a) over Stern and Adachi et al. (USP 5,631,664, hereinafter Adachi);

The applicants respectfully traverse these rejections.

Claim 1, upon which claims 3, 5, and 10-15 depend, specifically claims a display device that includes selection means to locally bring a movable element into contact with a light guide, wherein the movable element is situated in an evacuated space below 0.1 atmosphere.

The Examiner's attention is requested to MPEP 2142, wherein it is stated:

"To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) *must teach or suggest all the claim limitations*... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

The Office action asserts that Stern teaches that the movable element is situated in an evacuated space, but provides no support in Stern for this assertion. The Examiner references arrow G in Stern's Fig. 4B as indicating an evacuated space. Stern merely refers to arrow G as indicating a gap between the movable element and the light guide, and does not teach that this gap is within an evacuated space. As specifically defined by the applicants: "An evacuated space is taken to

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mean, in this application, a space with a pressure below 1/10 atmosphere"
(Applicants' page 2, lines 13-16).

Because Stern does not teach that the movable element is situated in an evacuated spaced below 0.1 atmosphere, as specifically claimed, the applicants respectfully maintain that the Office action fails to establish a prima facie case of obviousness, and thus the rejection of claims 1, 3, 5, and 10 under 35 U.S.C. 103(a) based on Stern's teaching of this limitation is unfounded, per MPEP 2142.

Claim 2, upon which claims 4, 8-9, and 16-18 depend, specifically claims a display device that includes selection means to locally bring a movable element into contact with a light guide, wherein the selection means includes a transparent electrode and the movable element contacts the light guide at the location of the electrode, thus causing light to be emitted through the transparent electrode.

The Office action acknowledges that Stern does not disclose transparent electrodes that generate the force to move the movable element to cause light to be emitted through the transparent electrode. The Office action notes that Adachi teaches transparent electrodes in a display system that uses electron emission by polarization reversal of ferroelectric material, and relies on a combination of these teachings to support the rejection of the applicants' claims.

The Examiner's attention is requested to MPEP 2143, wherein it is stated:
"THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE CLAIMED INVENTION".

The applicants respectfully maintain that the Examiner is using impermissible hindsight reconstruction to combine references to create a combination that includes elements of the applicants' claimed invention. The applicants are not claiming to have invented transparent electrodes; the applicants are claiming the use of transparent electrodes in a contact-based display system to achieve the advantages noted at page 3, line 33 through page 4, line 4. There is no suggestion in Stern to use transparent electrodes in a contact-based display to achieve these advantages, and there is no suggestion in Adachi to use Adachi's transparent electrodes in a display system that uses an entirely different technology and an entirely different principle of operation.

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The Office action asserts that it would have been obvious to one of ordinary skill in the art to combine the teachings of Stern and Adachi "to provide a high image resolution display", but provides no basis for this assumption that the combined teachings would improve the resolution of the display, or provide any other advantages. To the contrary, recognizing that conventional transparent electrodes are not optically 'pure', one of ordinary skill in the art would recognize that the addition of an electrode in an optical path of a display will generally degrade the quality and resolution of the display. Thus, absent recognition of some other advantage, such as those taught by the applicants, one of ordinary skill would not be lead to introducing an electrode into Stern's relatively unobstructed optical path.

Because there is no suggestion in Stern to introduce transparent electrodes into the unobstructed optical path of Stern's contact-based display, and because such an introduction would be contrary to conventional practice, absent the applicants' teachings, the applicants respectfully maintain that the proposed combination of Stern and Adachi is the result of impermissible hindsight reconstruction based on the applicants' teachings, and thus the rejection of claims 2, 4, 8, and 9 based on this combination is unfounded, per MPEP 2143.

The following remarks are provided regarding newly added independent claim 19, upon which claims 20-22 depend.

Claim 19 claims a display device that includes a light guide and a movable element, wherein at least one of the movable element and the light guide is provided with an anti-adhesion layer on the side at which the contact is made between the movable element and the light guide.

The Office action asserts that, because Stern teaches an anti-adhesion layer at column 9, lines 53-60, the cited text follows:

"As shown in the figure, the mechanical tap is embodied as a beam 28, and for dual electrostatic/mechanical actuation schemes, the beam is preferably formed of a material characterized by an internal stress, such as a compressive or tensile stress. Silicon (Si), silicon dioxide (SiO₂) or other oxides, silicon nitride (Si_{(x-1)N_x}), plastics, polymers, foils, or other suitable materials can be employed as the mechanical tap beam."

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The Office action cites Fidalgo for teaching a silicon based polymer anti-adhesion layer. Apparently, the Office action's basis for a rejection is that because Stern teaches the use of polymers, and because some polymers are anti-adhesive, Stern can be said to teach the use of anti-adhesives in Stern's display. The applicants respectfully disagree with this assertion, because it obviates the specific element claimed.

Stern specifically teaches that the movable element (the mechanical tap) is selected for its optical qualities, as well as compressive or tensile stress characteristics. Stern is silent with regard to the desirability of an anti-adhesion layer on the movable element or on the light guide. As noted above, the addition of any less-than-optically-perfect layer into Stern's relatively unobstructed optical path would be contrary to the general principles of display design, absent the applicants' teachings. The applicants respectfully maintain that one of ordinary skill in the art would not interpret Stern's teachings of the use of silicon, silicon dioxide or other oxides, silicon nitride, plastics, polymers, foils, or other suitable materials, as teaching or suggesting providing an anti-adhesion layer on the movable element and/or the light guide, because Stern's definition of a "suitable material" does not include considerations of anti-adhesion.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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